PATENT
Attorney Docket No. 049128-5018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	Confirmation No. 9570
Hyeon Ho SON, *et al.*	)	
Application No.: 09/893,676	)	Group Art Unit: 2674
Filed: June 29, 2001	)	Examiner: J. Nguyen
For: METHOD OF DRIVING LIQUID CRYSTAL DISPLAY	)	**MS: Appeal Brief - Patents**

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Window
Mail Stop Appeal Brief - Patents
Randolph Building
401 Dulany Street
Alexandria, VA 22314

APPELLANT'S BRIEF UNDER 37 C.F.R. §41 TRANSMITTAL FORM

1. Transmitted herewith is an Appellants' Brief Under 37 C.F.R. §41, which is being submitted further to the Notice of Appeal filed April 3, 2006.

2. Additional papers enclosed.

[ ] Drawings: [ ] Formal [ ] Informal (Corrections)
[ ] Information Disclosure Statement
[ ] Form PTO-1449, ___ references included
[ ] Citations
[ ] Declaration of Biological Deposit
[ ] Submission of "Sequence Listing", computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.

3. Oral Hearing Under 37 C.F.R. § 1.194

[ ] Oral hearing is hereby requested.
[ ] Fee under 37 C.F.R. § 1.17(d) is enclosed.

4. Extension of time

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136(a) apply.

[ ] Appellants petition for an extension of time, the fees for which are set out in 37 C.F.R. 1.17(a), for the total number of months checked below:

Total months requested	Fee for extension	[fee for Small Entity]
[ ] one month	$ 120.00	$ 60.00
[ ] two months	$ 450.00	$225.00
[ ] three months	$1,020.00	$510.00
[ ] four months	$1,590.00	$795.00

Extension of time fee due with this request: $

[X] If an extension of time is required, please consider this a Petition therefor.

5. Fee Payment

[ ] No fee is to be paid at this time.

[X] The Commissioner is hereby authorized to charge $ 500.00 ($500.00 for the Appellants' Brief fee 37 C.F.R. § 1.17(c) and $_____ for the extension of time fee 37 C.F.R. § 1.17(a)) to Deposit Account No. 50-0310.

[X] The Commissioner is hereby authorized to charge any additional fees which may be required, including fees due under 37 C.F.R. §§ 1.16 and 1.17, or credit any overpayment to Deposit Account 50-0310.

Respectfully submitted,

MORGAN, LEWIS & BOCKIUS LLP

Dated: June 5, 2006

By: _____
Kyle J. Choi
Reg. No. 41,480

CUSTOMER NO. 009629
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Tel: 202.739.3000
Fax.: 202.739.3100

PATENT
Attorney Docket No. 049128-5018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	Confirmation No. 9570
Hyeon Ho SON, *et al.*	)	
Application No.: 09/893,676	)	Group Art Unit: 2674
Filed: June 29, 2001	)	Examiner: J. Nguyen
For: METHOD OF DRIVING LIQUID CRYSTAL DISPLAY	)	**MS: Appeal Brief - Patents**

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Window
Mail Stop Appeal Brief - Patents
Randolph Building
401 Dulany Street
Alexandria, VA 22314

APPELLANT'S BRIEF UNDER 37 C.F.R. §41

This brief is in furtherance of the Notice of Appeal filed on April 3, 2006 in connection with the above-identified patent application, and appealing the final rejections of claims 1-4, 7-17, and 20-24 by the United States Patent and Trademark Office in a Final Office Action dated November 1, 2005 (Paper No. 20051025). The fee required under 37 C.F.R. § 41.20(b)(2) is being filed concurrently herewith. The period for filing this brief extends through June 5, 2006, as June 3, 2006 is a Saturday.

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is LG.Philips LCD Co., Ltd., a corporation of the Republic of Korea.

II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any other appeals or interferences that will directly affect, will be directly affected by, or will otherwise have a bearing on the decision in this appeal.

III. STATUS OF CLAIMS

The following summarizes the status of the claims in the present application:

Claims 1-24 are pending in the present application;

Claims 1-4, 7-17, and 20-24 stand finally rejected; and

Claims 5, 6, 18, and 19 stand objected to but was indicated as being allowable if rewritten in independent for including all the limitations of the base claim and any intervening claims.

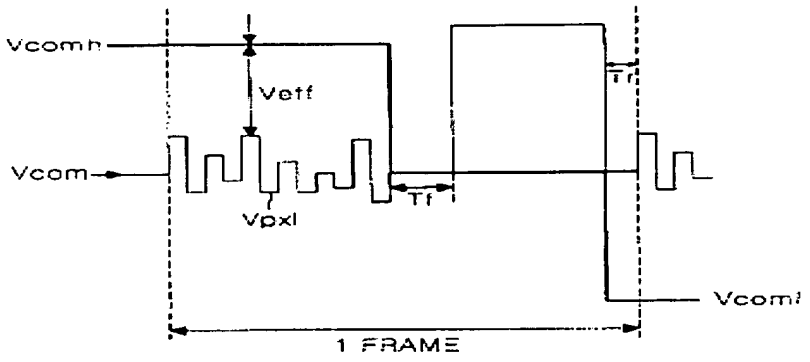
IV. STATUS OF AMENDMENTS

An after-final amendment was filed on January 30, 2006 to correct minor informalities in the claims. The Advisory Action issued on February 24, 2006 indicated that the after-final amendment of January 30, 2006 would be entered upon appeal. Accordingly, all amendments to the claims are believed to have been entered and considered on the merits. A copy of the pending claims, including the changes made in the after-final amendment, is presented in the attached Appendix A.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is directed to a method of driving a liquid crystal display (LCD) device during one display frame (FIG. 6, reproduced below for convenience) to prevent flicker phenomenon due to residual images from a prior display frame. (*See* page 5, paragraph [0012]). Claims 1 and 13 are independent and recite the following features.

FIG. 6



Claim 1 recites a method of driving a liquid crystal display device during one display frame, comprising the steps of applying one of a high-level common voltage (*e.g.*, FIG. 6: Vcomh) and a low-level common voltage (*e.g.*, FIG. 6: Vcoml) to a plurality of liquid crystal cells of the liquid crystal display device to write data into the liquid crystal cells within a time interval shorter than one display frame interval (*e.g.*, FIG. 6; p. 8, para. [0027]), applying a reference common voltage (*e.g.*, FIG. 6: Vcom applied during time period "Tr") to the plurality of liquid crystal cells after applying the one of the high-level common voltage (*e.g.*, Vcomh) and the low-level common voltage (*e.g.*, Vcoml), and turning on a backlight after the data writing to display an image (*e.g.*, FIG. 5: time period represented by a blank block).

Claim 13 recites a method of driving a liquid crystal display device during one display frame, the method comprising the steps of inputting data signals to a plurality of liquid crystal cells (*e.g.*, FIG. 6: Vpxl), allowing the liquid crystal cells to respond to the applied data signals (*e.g.*, FIG. 6: time period "Tf"; p. 9, para. [0029]), applying a reference common voltage (*e.g.*, FIG. 6: Vcom applied during time period "Tr") to the plurality of the liquid crystal cells after the allowing of the liquid crystal cells to respond, wherein one of a high-level common voltage (*e.g.*, Vcomh) and a low-level common voltage (*e.g.*, Vcoml) is applied to the plurality of liquid crystal cells during the inputting step.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-4, 7-17, and 20-24 are unpatentable under 35 U.S.C. §103(a) over Zavracky et al. (US 6,552,704) in view of Sugawara et al. (US 6,504,523).

VII. ARGUMENT

A. Zavracky et al. and Sugawara et al. both fail to teach or even suggest all the limitations of the independent claims 1 and 13.

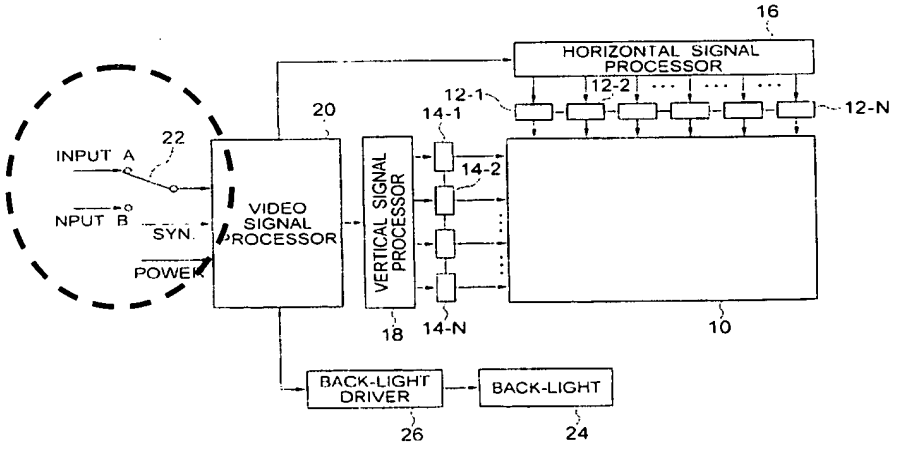
As an initial matter, there is no dispute that Zavracky et al. fails to teach or suggest at least the step of "applying a reference common voltage to the plurality of liquid crystal cells after applying the one of the high-level common voltage and the low-level common voltage" as recited, in part, in claim 1 and the step of "applying a reference common voltage to the plurality of the liquid crystal cells after the allowing of the liquid crystal cells to respond" as recited, in part, in claim 13. (*See* FOA: p. 2, last paragraph.) Appellants assert that Sugawara et al. also fails to teach or suggest such features.

The Office alleges that Sugawara et al. teaches "applying a reference common voltage

(Vcom = 0V from the time of t14 to t15) to the plurality of liquid crystal cells after applying the one of the high-level common voltage (Vcom = 5V before the time t13) and low-level common voltage (Vcom = -5V from the time of t13 to t14)," referring to FIG. 9. (*See* FOA: p. 3, ll. 1-4.) As argued previously and maintained here, FIG. 9 of Sugawara et al. does not teach "applying a reference common voltage to the plurality of liquid crystal cells after applying the one of the high-level common voltage and the low-level common voltage" (i.e., claim 1) or "applying a reference common voltage to the plurality of the liquid crystal cells after the allowing of the liquid crystal cells to respond" (i.e., claim 13) as alleged in the Final Office Action.

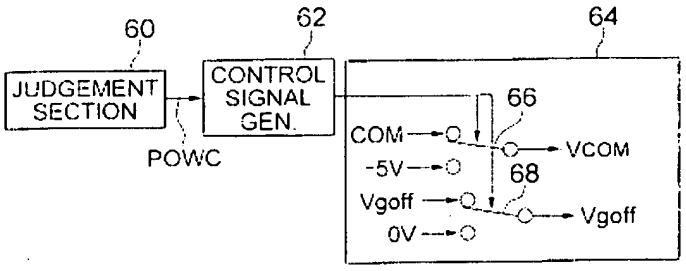
As explained in the after-final response filed November 1, 2005 (referred to herein as "AFR"), Sugawara et al. is directed to preventing flicker when an LCD display device switches from one display mode (e.g., SXGA) to another (e.g., VGA). (*See* col. 1, lns. 25-29; col. 4, lns. 11-12.) This is more explicitly shown in FIG. 5, which depicts the video signal processor 20 having a switch 22 between "Input A" and "Input B" to select the input source to the video signal processor 20, as reproduced below.

FIG. 5



More specifically, FIG. 8 of Sugawara et al. shows a detailed portion of the video signal processor 20 of FIG. 5, as reproduced below:

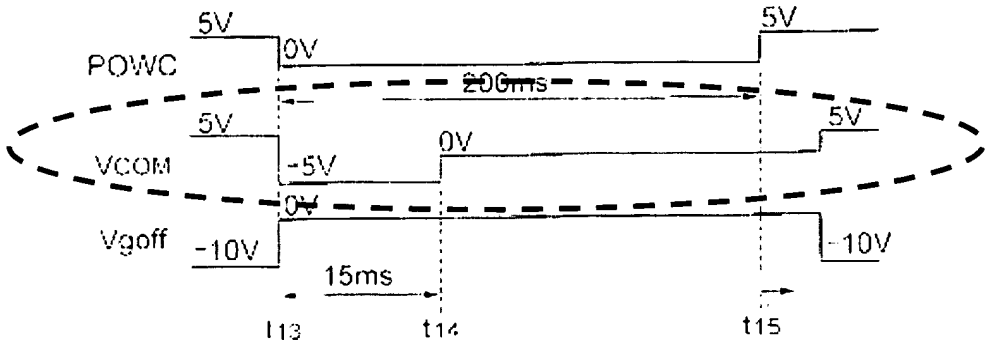
FIG. 8



As shown in FIG. 8 of Sugawara et al. and explained in column 6, lines 44-51, the judgment section 60 determines whether input signal voltages (i.e., Input A or Input B from FIG. 5) are supplied or not and delivers "an absence signal in a judgment signal POWC" (line 48). The control signal generator 62 when produces a control signal that is applied to switching section 64 to control switch 66 that applies a voltage to the common electrodes and switch 68 that applies a voltage to the gate lines (col. 6, ll. 52-54).

It is in this context that FIG. 9 of Sugawara et al. illustrates a signal diagram of various signals being generated by the control signal generator 62 and the switching section 64 of FIG. 8), as reproduced below.

FIG. 9



Specifically, Sugawara et al., as discussed above with respect to FIGs. 5 and 8, describes the common voltage (Vcom) generated by the switching section 64 having either ***a high level (5V)*** or ***a low level (-5V)***. (*See* col. 7, ll. 34-35.) The "0V" shown in FIG. 9 is indicating a ***result*** of there is no power being supplied to the LCD when the display mode is being switched (i.e., the switch 66 is floating). (*See* col. 6, lns. 59-60.) In other words, the switch 66 of FIG. 8 does not connect Vcom to a 0V source. Therefore, the "0V" state of FIG. 9 does not indicate that a Vcom of 0V is being ***applied*** to the common electrodes. Rather, as described in the specification, the "0V" shown in FIG. 9 is merely an indication of when power is absent (i.e., ***absence of voltage***) during the time when Sugawara's device is switching over from one of the display mode to another. (*See* col. 6, lns. 59-60.) As stated in Suguwara et al., "the common electrode potential Vcom...***assumes*** zero volt if the power source is off." (Col. 6, lns. 57-60.) In other words, FIG. 9 shows a state when Vcom "assumes" a value of zero to indicate when the power source is off during the display mode switching process. Accordingly, Appellants respectfully assert that Sugawara et al. does not teach at least the step of "applying a reference common voltage to the

plurality of liquid crystal cells after applying the one of the high-level common voltage and the low-level common voltage" (i.e., claim 1) or "applying a reference common voltage to the plurality of the liquid crystal cells after the allowing of the liquid crystal cells to respond" (i.e., claim 13) as alleged in the Final Office Action.

B. Zavracky et al. and Sugawara et al. cannot combined in the manner asserted to render independent claims 1 and 13 obvious.

In addition to the fact that Zavracky et al. and Sugawara et al. both fail to teach the limitations of the claimed invention, Appellants assert that Zavracky et al. and Sugawara et al. it would not have been obvious to on of ordinary skill in the art to have modified Zavracky et al. with Sugawara et al. in the manner asserted in the Final Office Action to render the claims obvious. In particular, Sugawara et al. not only fails to teach or suggest applying a reference common voltage to a plurality of liquid crystal cells, the timing of signals as depicted in FIG. 9 have nothing to do with a method of driving a liquid crystal display device ***during one display frame***, as recited in both independent claims 1 and 13. The time periods shown in FIG. 9 of Sugawara et al. is based on the ***time for switching between display modes*** as indicated by the POWC signal from the judgment section 60. (*See* col. 7, ll. 20-24.) In other words, the timing of the application of the signals shown in FIG. 9 of Sugawara et al. is based on when the POWC signal has been detected, ***not*** based on the time periods related to ***one display frame***, as recited in the claims of the present application.

Therefore, even if the Vcom=0V state shown in Sugawara et al. is a reference common voltage, *in arguendo*, there is no teaching in Sugawara et al. that would motivate one with

ordinary skill in the art at the time of the invention to have applied the signals represented in FIG. 9 of Sugawara et al. during ***one display frame*** of Zavracky et al. There is no relation between the method of displaying pictures in one display frame as disclosed in Zavracky et al. with that of the control signals for switching between display modes as disclosed in Sugawara et al. Accordingly, Appellants assert that there is no motivation for one of ordinary skill in the art to modify the driving method of displaying an image of Zavracky et al. with control signals for switching over from one display mode to another as disclosed in FIG. 9 of Sugawara et al. in ***one display frame*** of Zavracky et al. when both references are silent as to such a feature.

# # # # #

CONCLUSION

In view of the foregoing, Appellant(s) respectfully request(s) the reversal of the rejections asserted in the Final Office Action rejection and request(s) allowance of all of the pending claims. If there is any other fees due in connection with the filing of this Brief, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,

MORGAN, LEWIS & BOCKIUS LLP

Dated: June 5, 2006

By: _____
Kyle J. Choi
Reg. No. 41,480

Customer No.: 009626
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Telephone: 202.739.3000
Facsimile: 202.739.3001

VIII. APPENDIX A - CLAIMS

1. (Previously Presented): A method of driving a liquid crystal display device during one display frame, comprising the steps of:

applying one of a high-level common voltage and a low-level common voltage to a plurality of liquid crystal cells of the liquid crystal display device to write data into the liquid crystal cells within a time interval shorter than one display frame interval;

applying a reference common voltage to the plurality of liquid crystal cells after applying the one of the high-level common voltage and the low-level common voltage; and

turning on a backlight after said data writing to display an image.

2. (Previously Presented): The method according to Claim 1, wherein after applying one of the high-level common voltage and the low-level common voltage, the liquid crystal cells respond according to the data written between the time when the data is written and when the backlight is turned on.

3. (Previously Presented): The method according to Claim 1, wherein the reference common voltage is lower than the high-level common voltage and greater than the low-level common voltage.

4. (Previously Presented): The method according to Claim 1, further comprising the step of re-aligning the liquid crystal cells after the step of turning on the backlight.

5. (Previously Presented): The method according to Claim 4, wherein at the step of re-aligning, one of the high-level common voltage and the low-level common voltage is applied.

6. (Original): The method according to Claim 4, wherein at the step of re-aligning, a common voltage having a polarity opposite to the common voltage applied when the data is written is applied.

7. (Original): The method according to Claim 1, wherein when data is being written, an effective voltage remaining in the liquid crystal cell is larger than a data voltage applied to the liquid crystal cell.

8. (Original): The method according to Claim 1, wherein the high-level common voltage is equal to or more than +15V.

9. (Original): The method according to Claim 8, wherein the high-level common voltage is equal to a gate high voltage applied to a gate electrode of a thin film transistor of the liquid crystal cell.

10. (Original): The method according to Claim 1, wherein the low-level common voltage is equal to or less than -5V.

11. (Original): The method according to Claim 10, wherein the low-level common voltage is equal to a gate low voltage applied to a gate electrode of a thin film transistor in the liquid crystal cell.

12. (Previously Presented): The method according to Claim 1, wherein the driving method is applied to one of an optically compensated bend mode, a ferroelectric liquid crystal mode, and a twisted nematic mode liquid crystal display device.

13. (Previously Presented): A method of driving a liquid crystal display device during one display frame, the method comprising the steps of:

inputting data signals to a plurality of liquid crystal cells;

allowing the liquid crystal cells to respond to the applied data signals; and

applying a reference common voltage to the plurality of the liquid crystal cells after the allowing of the liquid crystal cells to respond,

wherein one of a high-level common voltage and a low-level common voltage is applied to the plurality of liquid crystal cells during the inputting step.

14. (Previously Presented): The method according to claim 13, wherein the reference common voltage is lower than the high-level common voltage and greater than the low-level common voltage.

15. (Previously Presented): The method according to claim 13, further comprising the step of turning on a backlight after the step of applying the reference common voltage.

16. (Previously Presented): The method according to claim 15, wherein one of the high-level and low-level common voltages is applied to the liquid crystal cells after the step of turning on.

17. (Previously Presented): The method according to claim 15, further comprising the step of re-aligning the liquid crystal cells after the step of turning on.

18. (Previously Presented): The method according to claim 17, wherein one of the high-level and low-level common voltages is applied to the liquid crystal cells during the step of re-aligning.

19. (Previously Presented): The method according to claim 17, wherein during the step of re-aligning, a common voltage applied to the liquid crystal cells has a polarity opposite to the common voltage during the step of inputting.

20. (Previously Presented): The method according to claim 13, wherein the high-level common voltage is equal to or more than +15V.

21. (Original): The method according to claim 13, wherein the high-level common voltage is equal to a gate high voltage applied to a gate electrode of a thin film transistor of the liquid crystal cell.

22. (Original): The method according to claim 13, wherein the low-level common voltage is equal to or less than -5V.

23. (Original): The method according to claim 13, wherein the low-level common voltage is equal to a gate low voltage applied to a gate electrode of a thin film transistor in the liquid crystal cell.

24. (Previously Presented): The method according to claim 13, wherein the driving method is applied to one of an optically compensated bend mode, a ferroelectric liquid crystal mode, and a twisted nematic mode liquid crystal display device.

IX. APPENDIX B - EVIDENCE

[NONE]

X. APPENDIX C - RELATED PROCEEDINGS

[NONE]